MOTOROLA
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PR860

Portable Radio

User Guide

CONTENTS

1

Contents

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2

SAFETY

PRODUCT SAFETY AND RF EXPOSURE COMPLIANCE

⚠️ **Caution**

Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with your radio.

ATTENTION!

This radio is restricted to occupational use only to satisfy FCC RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet enclosed with your radio (Motorola Publication part number 68P81095C98) to ensure compliance with RF energy exposure limits.

For a list of Motorola-approved antennas, batteries, and other accessories, visit the following web site which lists approved accessories: http://www.motorola.com/cgiss/index.shtml.

RADIO OVERVIEW

PARTS OF THE RADIO

PR860 Model

Channel Selector Knob

On/Off/Volume Knob

Side Button 1 (A)
(programmable)

Push-to-Talk (PTT)
Button

Side Button 2 (B)
(programmable)

Side Button 3 (C)
(programmable)

Top Button (TB)
(programmable)

LED Indicator

Microphone

Side
Connector
Cover

RADIO OVERVIEW

4
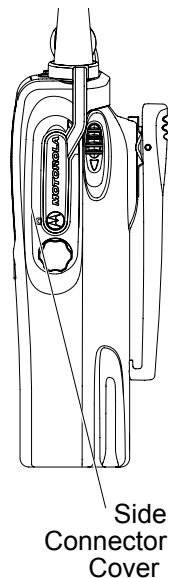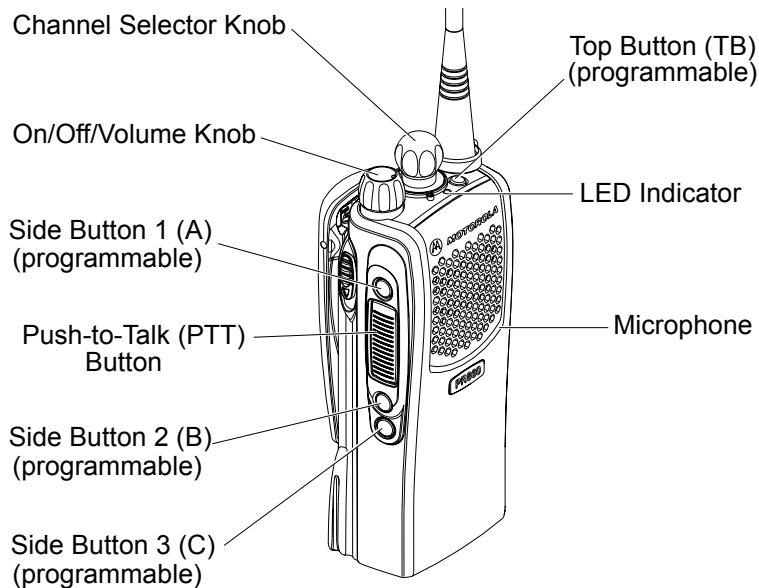
On/Off/Volume Knob

Turns the radio on or off, and adjusts the radio's volume.

Channel Selector Knob

Switches the radio to different channels.

LED Indicator

Indicates status of battery, power-up, scanning, and receipt of a selective call.

Programmable Buttons

Several of your radio's buttons can be programmed by your dealer as shortcut buttons for many of the radio's features.

Check with your dealer for a complete list of functions your radio supports.

Programmable buttons include:

• The three Side Buttons (A, B, C) and the Top Button (D)

Each button can access up to two features, depending on the type of button press:

• **short press**—quickly pressing and releasing the programmable buttons, or

• **long press**—pressing and holding the programmable buttons for at least 1 1/2 seconds, or

• **hold down**—pressing and holding down the programmable buttons while checking status or making adjustments.

The table on page 6 summarizes the programmable features available and shows the page number where the feature is explained.

In the "Button" column, have your dealer write down the programmable buttons next to the features that have been programmed to them.

Use the abbreviations (e.g., A for Side Button 1, D for Top Button, etc.) shown in the radio illustration at the front of this manual.

Also, where a choice exists, have your dealer indicate whether the button press is short press (SP) or long press (LP).

RADIO OVERVIEW

5

Radio Overview

Function	Short Press	Long Press	Hold Down	Page	Button
Emergency (Top button only)	Initiate Emergency Siren.	Cancel Emergency Siren.	—	15	
Monitor	Turn monitor function off.	Continually monitor selected channel.	—	—	
Volume Set	—	—	Sound a tone for adjusting your radio's volume level.	14	
Battery Gauge	—	—	Check the battery's charge status.	9	
Scan/Nuisance Channel Delete	Toggle scan on and off.	Delete a nuisance channel while scanning.	—	18	
Power level	Toggle transmit power level between High and Low.†		—	16	
Repeater/Talkaround	Toggle between using a repeater or transmitting directly to another radio.†		—	15	
Squelch	Toggle squelch level between Tight and Normal.†		—	16	
Option Board (if one is installed)	Toggle between activating and deactivating the option board.†		—	—	
Radio Call	Make a radio call.†		—	15	

† This function is activated by **EITHER** a short press **OR** a long press, but not both.

6

Push-to-Talk (PTT) Button

Press and hold down this button to talk; release it to listen.

Microphone

When sending a message, hold the microphone 1 to 2 inches (2.5 to 5 cm) away from your mouth, and speak clearly into the microphone.

AUDIO INDICATORS FOR PROGRAMMABLE BUTTONS

 High-Low Tone

 Low-High Tone

Some programmable buttons use tones to indicate one of two modes:

Button	High-Low Tone	Low-High Tone
Scan	**Start** scan	**Stop** scan
Power Level	**Low** power selected	**High** power selected
Squelch	**Tight** squelch	**Normal** squelch
Option Board	Activated	Deactivated
Repeater/ Talkaround	Does not use repeater	Uses repeater

RADIO OVERVIEW

7

GETTING STARTED

BATTERY INFORMATION

Charging the Battery

If a battery is new, or its charge level is very low, you will need to charge it before you can use it.

Note: Batteries are shipped uncharged from the factory. Always charge a new battery 14 to 16 hours before initial use, regardless of the status indicated by the charger.

To charge the battery:

Place the battery, with or without the radio, in the charger. The charger LED indicates the charging progress:

LED color	Status
No LED Indication	Battery inserted incorrectly.
Single Green Flash	Successful charger power-up.
Flashing Red*	Battery unchargeable or not making proper contact.
Steady Red	Battery in rapid-charge mode.
Flashing Yellow	Battery in charger, not in rapid-charge mode but waiting to be charged.

LED color	Status
Flashing Green†	Battery 90% (or more) charged.
Steady Green	Battery fully charged.

* Remove the battery from the charger and use a pencil eraser to clean the four metal contacts on the bottom of the battery. Place the battery back in the charger. If the LED indicator continues to flash red, replace the battery.

† A standard battery may require one hour to charge to 90%.

Battery Charge Status

You can check battery charge status by holding down the preprogrammed **Battery Gauge** button (see page 6). The charge status is shown by the color of the radio's LED indicator.

Battery Level	LED Indicator
High	Green
Sufficient	Yellow
Low	Blinking red
Very Low	None

Battery chargers only charge the Motorola-authorized batteries listed at *Chargers* on page 19; other batteries may not charge.

GETTING STARTED

9

Getting Started

Attaching the Battery
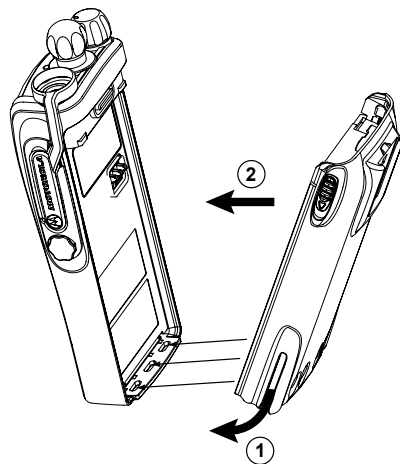
1	Fit the extensions at the bottom of the battery into the bottom slots on the radio.
2	Press the top part of the battery toward the radio until you hear a click.

Removing the Battery
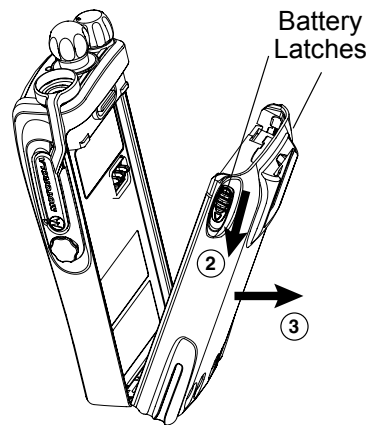
Battery
Latches

1	Turn off the radio (see page 13).
2	Slide both battery latches downward.
3	Pull the top part of the battery away from the radio.

10

ACCESSORY INFORMATION

Attaching the Antenna
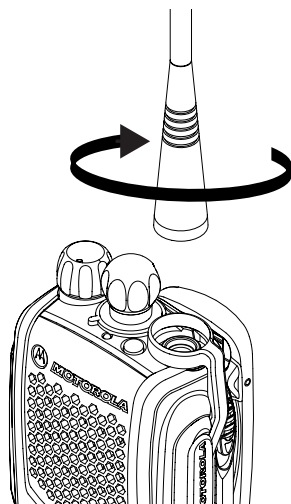
Turn the antenna clockwise to attach it.

Removing the Antenna
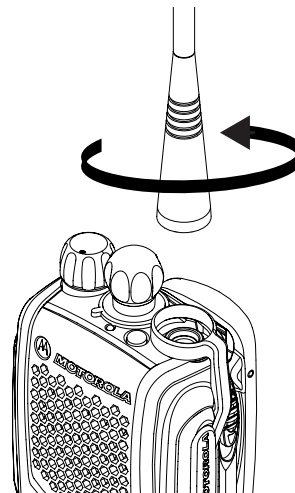
Turn the antenna counterclockwise to remove it.

Getting Started

Attaching the Belt Clip
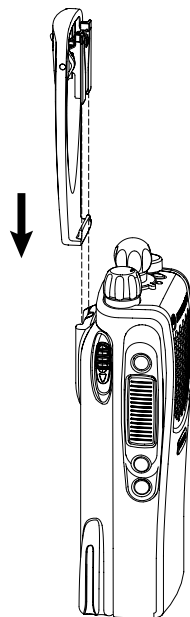
1 Align the grooves of the belt clip with those of the battery.

2 Press the belt clip downward until you hear a click.

Removing the Belt Clip
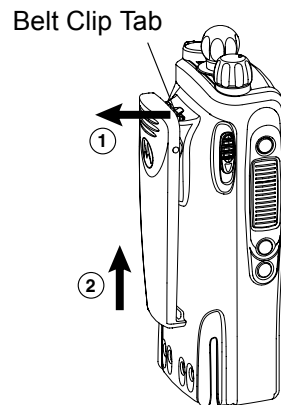
Belt Clip Tab

1 Use a key to press the belt clip tab away from the battery.

2 Slide the belt clip upward to remove it.

12

Attaching the Side Connector Cover

Antenna

Loop

Slot

Thumbscrew
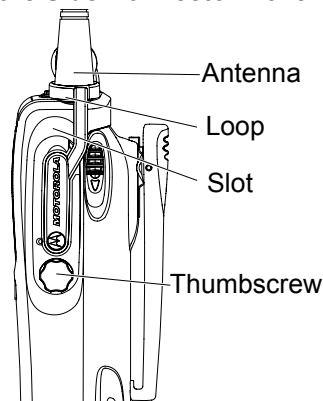
1   Place the loop (attached to the side connector cover) over the antenna; then slide it downward until it touches the top of the radio.

2   Insert the tab on the top of the cover into the slot above the connector.

3   Position the cover over the connector and align the thumbscrew with the threaded hole in the radio.

4   Tighten the thumbscrew to hold the cover in place. **Do not overtighten the thumbscrew**.

TURNING THE RADIO ON OR OFF

ON

OFF
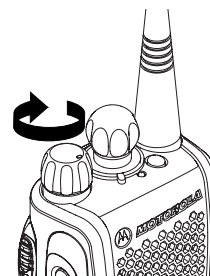
Turn the **On/Off/ Volume Control** knob clockwise.

If power-up is successful, you will hear the Self-Test Pass Tone

and see the LED turn green.

If the radio fails to power up, you will hear the Self-Test Fail Tone
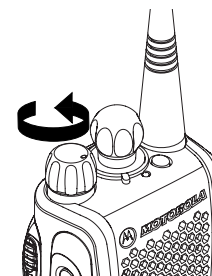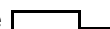
Turn the **On/Off/ Volume Control** knob counterclockwise until you hear a click.

13

GETTING STARTED

ADJUSTING THE VOLUME

1 Hold down the **Volume Set** or **Monitor** button (see page 6); you will hear a continuous tone.

2 Turn the **On/Off/Volume Control** knob to the desired volume level.

3 Release the **Volume Set** or **Monitor** button.

SELECTING A RADIO CHANNEL

Your radio offers either 4 or 16 channels.

Note: Due to government regulations, some channels may not be programmed. Ask your dealer for more information.

To select a channel, turn the **Channel Selector** knob clockwise or counterclockwise until you reach the desired channel.

SENDING A CALL

1 Turn your radio on.

2 Use the **Channel Selector** knob to select the desired channel.

3 Hold the radio in a vertical position, press the **PTT** button, and talk at a distance of about 1 to 2 inches (2.5 to 5 cm) from the microphone.

4 Release the **PTT** button to listen.

RECEIVING A CALL

1 Turn your radio on.

2 Adjust the radio's volume (see page 14).

3 Switch to the desired channel.

4 If at any time a call comes through, you will hear the call at the volume level you have set.

RADIO CALLS

RECEIVING A SELECTIVE CALL (16-channel models only)

When you receive a selective call:

• You will hear two alert tones.

• The LED Indicator will light yellow.

To answer the call, press the **PTT** button.

RECEIVING A CALL ALERT™ PAGE (16-channel models only)

When your radio receives a Call Alert page, it sounds four alert tones continuously until you respond.

Press the **PTT** button to answer the Call Alert page, or press any other key to cancel it.

Note: Your radio will not receive any Selective Calls until you clear the page.

SOUNDING AN EMERGENCY SIREN

When the orange **Top** button is pressed, your radio will sound a loud, piercing Emergency Siren (see page 6), if programmed by your dealer (see page 5).

To stop the Emergency Siren, press the **Emergency** button again.

REPEATER OR TALKAROUND MODE

Talkaround Mode enables you to communicate with another radio when either:

• the repeater is not operating

–*or*–

• your radio is out of the repeater's range but within communicating distance of another radio.

Press the preprogrammed **Repeater/ Talkaround** button (see page 6) to toggle between Repeater Mode and Talkaround Mode.

15

SETTING TIGHT OR NORMAL SQUELCH

Use this feature to filter out nuisance (unwanted) calls and/or background noise. However, tightening squelch could cause calls from remote locations to be filtered out as well. In this case, normal squelch may be more desirable.

Press the preprogrammed **Squelch** button (see page 6) to toggle between tight and normal squelch.

SETTING THE POWER LEVEL

Each channel in your radio has a predefined transmit power level that can be changed:

*   *High power* allows you to reach a radio that is farther away.

*   *Low power* conserves the battery's charge.

*   *Auto power* automatically sets the optimal power level based on the strength of the signal received. If the received signal is weak, the transmit level will be set to high, and vice-versa.

    Note: Be aware that a message received from a nearby radio might change your radio's power level to low. This may cause radios that are farther away not to receive your transmissions.

Press the preprogrammed **Power Level** button (see page 6) to toggle between low and high power.

16

SCAN

You can monitor multiple channels and receive any calls that are transmitted on them. Depending on your radio model, either four or sixteen different channels can be programmed into each scan list by the dealer. Your radio will automatically switch to a scan list channel when it detects activity on it.

Note: The same channels can be assigned to different scan lists.

STARTING OR STOPPING SCAN

The LED indicator blinks green during a scan operation, and stops blinking when the radio switches to a channel.

To start or stop a scanning, press the preprogrammed **Scan** button (see page 6).

Scanning a Priority Channel

You may want to check the activity on one channel more frequently than others. Your dealer is able to prioritize channels for you. For example:

Priority Channel	Scanning Sequence
None specified	Ch1➠Ch2➠Ch3➠ Ch4➠…Ch1
Channel **2**	Ch**2**➠Ch1➠Ch**2**➠Ch3➠ Ch**2**➠Ch4➠Ch**2**➠…Ch1

Note: Even if there is activity on a non-priority channel, your radio will automatically switch to an active priority channel, and indicate the activity with a short tone.

TALKBACK

While your radio is scanning, Talkback allows you to participate in a call in progress. You must press the **PTT** button to participate in the call; otherwise, scanning continues to the next channel.

SCAN

17

DELETING A NUISANCE CHANNEL

If a channel continually generates unwanted calls or noise (a "nuisance" channel), use the **Scan** button to temporarily delete the channel from the scan list:

1 While the radio is on the nuisance channel, hold down the **Scan** button until you hear a tone.

2 Release the **Scan** button. The nuisance channel is deleted.

Note: You cannot delete a priority channel or the last remaining channel in a scan list.

Restoring a Channel Back to the Scan List

To restore a previously deleted channel back to the scan list, restart the scan operation or turn your radio off and on again.

SCAN CHANNEL DISCOVERY ALERT

This feature enables you to identify the last channel monitored before scanning was stopped. To identify the last channel monitored, turn the **Channel Selector** knob until you hear an alert tone.

ACCESSORIES

Motorola offers a number of accessories to enhance the productivity of your two-way radio. Many of the available accessories are listed below. For a complete list, see your Motorola dealer.

CARRY ACCESSORIES

HLN9714	2 1/2" Spring Action Belt Clip
HLN9844	2" Spring Action Belt Clip
HLN9952	Carry Holder Belt Clip
HLN9652	Leather Case with Belt Loop, Li-Ion
HLN9665	Leather Case with Belt Loop, NiMH & NiCd
HLN9670	Leather Case with Swivel, Li-Ion
HLN9676	Leather Case with Swivel, NiMH & NiCd
HLN9701	Nylon Case with Belt Loop
NTN8039	2.5" High Activity Swivel Belt Loop
NTN8040	3" High Activity Swivel Belt Loop
HLN6602	Universal Chest Pack
RLN4815	RadioPAk Radio/Utility Case
TDN9327	Portable Radio Hanger (for door panels up to 2.75")

TDN9373	Portable Radio Hanger (for door panels from 2.75" to 3.25")
HLN9985	Waterproof Bag
NTN5243	Shoulder Strap

CHARGERS

WPLN4182	impres™ 120 Volt Single-Unit Charger
WPLN4187	impres™ 120 Volt Multi-Unit Charger
WPLN4192	impres™ 120 Volt Multi-Unit Charger with Display
AAHTN3000	120 Volt Single-Unit Rapid Rate Intelli-Charger
AAHTN3003	120 Volt 6 Unit Rapid Rate Intelli-Charger
NLN7967	Wall Mount Kit for Multi-Unit Charger
WPLN4124_R	Battery Optimizing System II (BOS II)
RL-76345	Battery Optimizing System (BOS II) Adapter Plate
RLN5233	Hard Wire Vehicular Charger
RLN4883	Travel Charger
NDN4005	Battery Maintenance System Plus (BMS^PLUS^), Three Station
WPLN4079_R	Battery Maintenance System Plus (BMS^PLUS^), Six Station

ACCESSORIES

Accessories

WPLN4107_R	Motorola Conditioning Charger (MCC) Singe-Unit with Adapter Plate
WPPN4065_R	Motorola Conditioning Charger (MCC) Four Station
WPPN4082_R	Adapter Plate Only (use with MCC)
RLN4814	Vehicular Mounting Bracket For Single Unit MCC
WPPN4079_R	BMS Battery Adapter (for use with NiCd & NiMH batteries)
WPPN4080_R	BMS Battery Adapter (for use with NiCd, NiMH & Li-Ion Batteries)

VEHICULAR ADAPTERS AND ACCESSORIES

AAEN1006	Vehicular Adapter - VHF
AAEN1007	Vehicular Adapter - UHF
ENKN4002	Programming Cable for VHF and UHF Vehicular Adapters
GKN6270	Power Cable with 10A Fuse
GSN6059	13 W External Speaker

HEADSETS

AARMN4018	Lightweight Single Muff Headset with Swivel Boom Mic & Inline PTT
AARMN4031	Lightweight Single Muff Adjustable Headset with Swivel Boom Mic

ENMN4012	Ultra-Light Headset, Behind the Head
AARMN4017	Ultra-Light Headset, Earbud Style Receiver
RMN4048	Temple Transducer
RMN5048	Rugged Temple Transducer
ENMN4016	Medium Duty Headset, Behind the Head
AARMN4019	Medium Weight Over-the-Head Headset with Noise Cancelling Mic & Inline PTT
AARMN4032	Medium Weight Over-the-Head Headset with Noise Cancelling Mic
RMN5047	NFL Style Heavy Duty Headset (requires AAHLN9716 Adapter)
RMN5015	Racing Headset (RKN4091 adapter cable required)
AARMN4020	Push-to-Talk or VOX Heavy Duty Headset
RMN4051	2-Way Hard-Hat Mount Headset, Black (requires RKN4097 adapter cable)
RMN4052	Tactical Headband Style Headset, Gray (requires RKN4097 adapter cable)
RMN4053	Tactical Hard-Hat Mount Headset, Gray (requires RKN4097 adapter cable)
RMN4054	Receive Only Hard-Hat Mount Headset
RMN4055	Receive Only Headband Style Headset

ADAPTERS AND CABLES

AAHLN9716	Adapter for Audio Accessories
RKN4097	In-Line PTT Adapter Cable
RKN4091	Adapter Cable (for use with RMN5015)

SURVEILLANCE

AARMN4021	Receive Only Earpiece, 1-wire, Beige
AARMN4028	Receive Only Earpiece, 1-wire, Black
AARMN4022	Earpiece with Microphone and Push-to-Talk Combined, 2-Wire, Beige
AARMN4029	Earpiece with Microphone and Push-to-Talk Combined, 2-Wire, Black
ENMN4017	Earpiece with Microphone and Push-to-Talk Combined, 3-Wire, Beige
ENMN4014	Earpiece with Microphone and Push-to-Talk Combined, 3-Wire, Black
NTN8370	Extreme Noise Kit
NTN8371	Low Noise Kit
RLN5316	Comfort Earpiece with Microphone and PTT Combined, 2-Wire, Beige
RLN5315	Comfort Earpiece with Microphone and PTT Combined, 2-Wire, Black
RLN4922	Completely Discreet Earpiece Kit
ENMN4013	Flexible Ear Receiver

CommPort

NTN1722	Integrated Ear Microphone/Receiver System with PTT on Radio Adapter
NTN1723	Integrated Ear Microphone/Receiver System with Palm PTT
NTN1724	Integrated Ear Microphone/Receiver System with Ring PTT
NTN1737	Integrated Ear Microphone/Receiver System with Snap-on-Side PTT
NNTN4187	Integrated Ear Microphone/Receiver System with Body PTT

EAR MICROPHONE SYSTEM

BDN6677	Ear Microphone for Standard Noise Levels, Black
BDN6678	Ear Microphone for Standard Noise Levels, Beige
BDN6641	Ear Microphone for High Noise Levels, Gray
AARMN404	4 Push-to-Talk Only Interface Module
AARMN404	5 Push-to-Talk or Voice Activated Interface Module
0180358B38	Push-to-Talk Ring Switch
0180300E83	Push-to-Talk Body Switch
0180300E25	Earguard with Adjustable Loop

21

MICROPHONES

AAHMN9052	Remote Speaker Microphone
AAHMN9053	Noise-Cancelling Remote Speaker Microphone
AAHMN9054	UHF Public Safety Speaker Microphone
AAHMN9057	VHF Public Safety Speaker Microphone
RMN5055	Heavy Duty Remote Speaker Microphone

BATTERIES

HNN4001	impres^{TM} NiMH, 1900 mAH, 7.5 V
HNN4002	impres^{TM} NiMH, 1800 mAH, 7.5 V, Intrinsically Safe
HNN4003	impres^{TM} Li-Ion, 2000 mAH, 7.5 V
HNN9008_R	Premium NiMH, 1500 mAH, 7.5 V (not compatible with low band models)
HNN9009_R	Premium NiMH, 1900 mAH, 7.5 V
HNN9010_R	Premium NiMH, 1800 mAH, 7.5 V, Intrinsically Safe
HNN9011_R	Premium NiCd, 1200 mAH, 7.5 V, Intrinsically Safe
HNN9012_R	Premium NiCd, 1300 mAH, 7.5 V
HNN9013_R	Premium Li-Ion, 1200 mAH, 7.5 V

ANTENNAS

NAD6502_R	VHF 146-174 MHz, Heliflex
PMAD4012	VHF 136-155 MHz 9 cm, Stubby
PMAD4025	VHF 150-161 MHz, Stubby
PMAD4013	VHF 155-174 MHz 9 cm, Stubby
8504762J01	VHF 136-155 MHz 14 cm, Whip
NAD6579	VHF 148-161 MHz, Whip
PMAD4023	VHF 150-161 MHz, Whip
8504762J02	VHF 155-174 MHz 14 cm, Whip
PMAE4002	UHF 403-433 MHz, Stubby
8504762J08	UHF 433-470 MHz, Stubby
NAE6483_R	UHF 403-520 MHz, Whip
NAB6064	Low Band 30-50 MHz, Heliflex

ACCESSORIES

22

Sending a Call

1. Turn **Channel Selector** knob to desired channel.
2. Press **PTT** and speak clearly with mouth about 2.5 to 5 cm (1 to 2 inches) away from microphone.
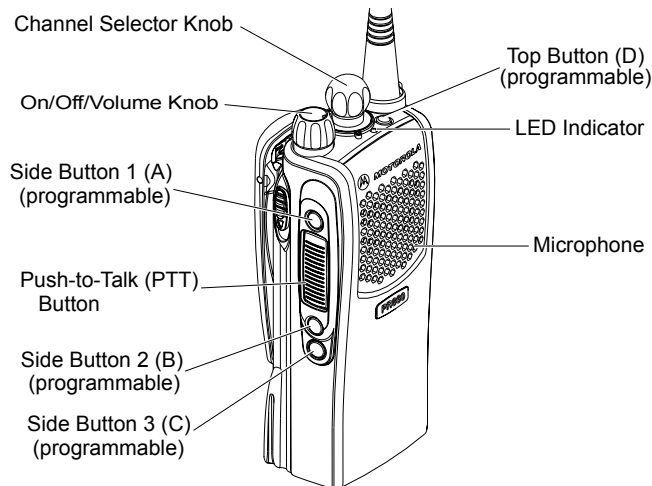3. Release **PTT** to listen.

Receiving a Call

1. Turn radio on and set volume level.
2. Switch to desired channel.
3. When a call is received, it will be heard at the volume level you set.

Deleting a Nuisance Channel During Scanning

1. While on a nuisance channel, press and hold preprogrammed **Scan** button until you hear a tone.
2. Release **Scan** button.

Sounding an Emergency Siren

- Press preprogrammed **Emergency** button (Top button [D]) to sound *Emergency Siren*.
- Press **Emergency** button again to stop *Emergency Siren*.

MOTOROLA

PR860™ Quick Reference Card

Record the functions for your radio's programmable buttons in the table provided below. For further information, see page 6 in this User Guide.

Channel Selector Knob
Top Button (D) (programmable)
On/Off/Volume Knob
LED Indicator
Side Button 1 (A) (programmable)
Microphone
Push-to-Talk (PTT) Button
Side Button 2 (B) (programmable)
Side Button 3 (C) (programmable)

Button	Function	Short Press	Long Press	Hold Down	Page

MOTOROLA

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